

Appln. No. 09/801,602
Amdt. dated February 10, 2005
Reply to Office Action dated December 1, 2004

R E M A R K S / A R G U M E N T S

Reconsideration of the present application, as amended, is respectfully requested.

The December 1, 2004 Office Action and the Examiner's comments have been carefully considered. In response, claims are cancelled and amended, and remarks are set forth below in a sincere effort to place the present application in form for allowance. The amendments are supported by the application as originally filed. Therefore, no new matter is added.

PRIOR ART REJECTIONS

In the Office Action claims 1-5 and 8-15 are rejected under 35 USC 103 as being unpatentable over the article entitled "From Requirements to Design with Use Cases" by Regnell et al. in view of the article entitled "Requirements Management with Use Cases" by Heim. Claims 6 and 7 are rejected under 35 USC 103 as being unpatentable over Regnell et al. and Heim, and further in view of USP 6,366,683 (Langlotz).

In response, independent claim 1 is amended in order to more clearly define the present claimed invention over the cited references. Specifically, amended claim 1 is directed to a method for simultaneously developing a family of complex systems having

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a common software architecture platform. The family of complex systems includes a plurality of complex systems. The method includes the steps of constructing an initial requirements object model which explains abstract concepts in terms of a structured vocabulary, forming an initial set of use cases based on the initial requirements object model, the use cases describing interaction of users with each complex system in terms of abstract concepts, forming an initial functional requirements specification (FRS) which includes use cases, forming an amended requirements object model based on the initial FRS and thus in consideration of the initial set of use cases, forming additional use cases based on analysis of the amended requirements object model, changing the FRS in light of the additional uses cases, forming another amended requirements object model based on the changed FRS simultaneously with the formation of the additional use cases, repeating the additional use case formation step, the FRS changing step and the amended requirements object model formation step until all desired use cases have been formed and considered, and obtaining a final requirements object model once all of the desired use cases have been considered.

As discussed in the specification, it is preferable to construct an initial requirements object model from which an initial set of use cases can be written and then to "fine-tune" the requirements object model to form a consistent basis for the

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FRS (see page 4, lines 28-30). Fine-tuning of the requirements object model is provided by the authoring of use cases simultaneously or "hand-in-hand" with formation of "amended" or intermediate requirements object models until the final requirements object model is obtained, i.e., after all use cases have been considered. As more use cases are written, the FRS is changed leading to a change in the requirements object model, i.e., forming a changed or amended requirements object model.

The formation of an amended requirements object model based on the changed FRS simultaneous with the formation of the additional use cases is particularly advantageous when developing a family of complex systems. Advantages include a clear and consistent functional requirements specification (see page 2, lines 19-22) and a requirements object model which takes into account future evolution of the complex systems (see page 3, line 3-8). In particular, since writing use cases uncovers conceptual difficulties and shortcomings of the current requirements object model, the simultaneous development of use cases and formation of the amended requirements object model occurs in consideration of such difficulties and shortcomings (see the specification at page 4, lines 16-23). Reasons why the requirements object model would be amended are discussed at page 11, lines 14-20. An improved requirements object model is therefore formed leading to an improved final design object model.

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The cited prior art does not disclose, teach or suggest forming amended requirements object models simultaneous with the formation of additional use cases (see claim 1, lines 22-24).

Regnell et al. describes a method for generating a component model using as input a list of requirements and a use case model itself derived from a list of requirements and a distribution model (see Figs. 1 and 2). Regnell et al. does not, however, amend the component model simultaneous with the formation of use cases. The formation of use case is described at page 4, last paragraph, in conjunction with the formation of the initial use case model. There is no mention however of a subsequent formation of use cases based on the component model and simultaneous changing or amending of the component model.

Heim describes a requirements management process in which after a model is created, implementation of a prototype and testing are done prior to full-scale development (see Fig. 8). Instead of full-scale development, additional scenarios leading to more use cases can be developed which affect the model. In contrast to the present claimed invention however, there is no simultaneous formation of additional use cases based on a requirements object model and formation of an amended requirements object model based on the additional use cases, with a view toward fine-tuning the requirements object model before a final, testable requirements object model is obtained.

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In view of the foregoing, independent claim 1 is patentable over Regnell et al. and Heim when taken in combination under 35 USC §103(a).

The other references of record do not close the gap between the present claimed invention as defined by claim 1 and Regnell et al. and Heim.

Therefore, claim 1 is patentable over all of the references of record under 35 USC 102 as well as 35 USC 103.

Claims 2-9 and 11-14 are either directly or indirectly dependent on claim 1 and are patentable over the references of record in view of their dependence on claim 1 and because the references of record do not disclose, teach or suggest each of the limitations set forth in claims 2-9 and 11-14.

* * * * *

If the Examiner disagrees with any of the foregoing, the Examiner is respectfully requested to point out where there is support for a contrary view.


Entry of the amendment, allowance of the claims, and the passing of the application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the

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undersigned at the telephone number given below for prompt
action.

Respectfully submitted,


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